GENERAL EMBRYOLOGICAL INFORMATION SERVICE

1962

(supplement
to the
ninth issue)

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INTRODUCTION

In this supplement to the ninth full issue the chapter "Supply and demand service for laboratory animals" has been omitted. On the one hand the in the G.E.I.S. published data had become more and more fragmentary and on the other hand other organizations, as e.g. "The International Committee on Laboratory Animals" are taking over our task. A continuation of this service would therefore lead to an overlapping of activities.

This supplement therefore contains only the chapters:

1) Changes of address . . . . . p. 5

2) Communications from the Hubrecht Laboratory and the "International Institute of Embryology" . . . . . p. 9

3) Announcements of recently published books on development and related subjects . . . . . p. 11

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Communications from the Hubrecht Laboratory

I The building project

The construction of the new building was started at the beginning of this year and has made very good progress. We expect that the building may be completed by the end of 1963.

II The team work project

Since preparations for the organisation of an international team work require at least one full year and since we like to be sure that the organisation of the new building functions properly before receiving a larger number of foreign guests, the next international team work will be held in the first half of 1965. The announcement may be expected in the second half of 1963, so that all applications may be sent in by the end of 1963.

In the meantime there are still available a limited number of places for individual foreign guest workers in the old building.

III The scientific staff

The scientific staff of the Hubrecht Laboratory comprises at present the following members:

Prof. Dr. P. D. Nieuwkoop, general and scientific director.

Dr. J. Faber, who will be in charge of the scientific unit for developmental genetics, is at present working in the institute of Prof. Dr. E. Hadorn in Zürich for his further specialisation in that field.

Miss E. C. Boterenbrood, who received her Ph. D. degree in July of this year, will be in charge of the unit of descriptive and experimental morphology.

Dr. D. O. E. Gebhardt (biochemist) will guide the scientific work in the unit for developmental physiology.

(Miss) Dr. K. Lawson joined our staff in September of this year and will be in charge of the unit for tissue and organ culture.

Dr. K. Hara has recently joined our staff and will guide the unit of photo- and cinematography.

Mr. J. A. Leussink, who is working for his thesis, directs at present the reorganisation of the Central Embryological Library.

It is hoped that soon a biophysicist will join our staff for the unit of developmental biophysics as well as a histologist or biochemist for the unit of histology and histo- and cyto-chemistry.

In the near future the directorship of the institute will be split into a scientific and an administrative position, so that the scientific director will have more time available for the coordination and integration of the scientific work in the various units.

IV Guest workers

Dr. M. S. Falakali (Izmir, Turkey) stayed from September 1961 till the end of April of this year and studied various experimental embryological techniques.

Mr. J. D. Babb (Gambier, Ohio) who stayed from September 1961 till the

middle of July of this year, applied transplantation and explantation techniques as well as time lapse cinematography to the analysis of the propagation of inductive influences through competent ectoderm in Urodeles.

V The Central Embryological Library

A. *The reprint library*

Good progress has already been made in the reorganisation of the reprint collection. It is hoped to complete this project before the end of next year.

B. *Services rendered by the C.E.L., loan conditions*

See the 1961 ninth full issue, page 263.

VI The Central Embryological Collection of slides and material

See the 1961 ninth full issue page 263 and 264.

VII Photographic Reproduction Service

See the 1961 ninth full issue page 264.

Communications of the „International Institute of Embryology"

(Section on Developmental Biology of the I.U.B.S.)

The I.I.E. announces with great regret the death of the following fellows: P. A. Ancel (January, 1961), P. Gérard (December, 1961), G. Cotronei (May, 1962), A. M. Schechtman (June, 1962), O. Mangold (July, 1962), H. Bluntschli (July, 1962), and of one of its members: H. Bautzmann (November, 1962).

The next International Embryological Congress will be held in Baltimore, Md., U.S.A. from September 7 to 12, 1964, shortly after the meeting of the Cell Biologists in Providence, R.I.

A tentative programme is being composed by the Board of the I.I.E. in collaboration with the National Committee, which will be in charge of the local organisation of the Congress.

Announcements of recently published bookson development and related subjects

Group A (books for instruction):

1. CRAIGMYLE, M. B. L., 1962 — "Aids to embryology" (6th edit.)
2. GORBMAN, A. and H. A. BERN, 1962 — "A textbook of comparative endocrinology"
3. GUTTENBERG, H. v., 1961 — "Grundzüge der Histogenese höherer Pflanzen; II. Die Gymnospermen"
4. HAMILTON, W. J., J. D. BOYD and H. W. MOSSMAN, 1962 — "Human embryology" (3rd edit.)
5. HOERR, N. L., S. I. PYLE and C. C. FRANCIS, 1962 — "Radiographic atlas of skeletal development of the foot and ankle; A standard of reference"
6. LEE, A. E. and Ch. HEIMSCH, 1962 — "Development and structure of plants; A photographic study"
7. RUGH, R., 1961 — "Laboratory manual of vertebrate embryology" (5th edit.)
8. RUGH, R., 1962 — "Experimental embryology; Techniques and procedures" (3rd edit.)
9. THOMAS, E., 1961 — "Die kindliche Entwicklung; Physiologie und Pathologie"
10. TORREY, Th. W., 1962 — "Laboratory studies in developmental anatomy" (2nd edit.)
11. TORREY, Th. W., 1962 — "Morphogenesis of the vertebrates"
12. TURCHINI, J., 1962 — "Embryologie" (2nd edit.)

Group A/B (books for instruction/research):

13. HADORN, E., 1961 — "Experimentelle Entwicklungsforschung an Amphibien"
14. LUISADA, A. A. (edit.), 1961 — "Development and structure of the cardiovascular system"
15. TÖNDURY, G., 1962 — "Embryopathien; Über die Wirkungsweise (Infektionsweg und Pathogenese) von Viren auf den menschlichen Keimling"

Group B (books for research):

16. ANDO, H., 1962 — "The comparative embryology of Odonata, with special reference to a relic dragonfly, Epiophlebia superstes Selys"
17. AUSTIN, C. R., 1961 — "The mammalian egg"

18. BISHOP, D. W. (edit.), 1962 — "Spermatozoan motility"
19. BRACHET, J. and A. E. MIRSKY (edit.), 1961 — "The cell" (Vols. II and V)
20. BULLOUGH, W. S., 1961 — "Vertebrate reproductive cycles" (2nd edit.)
21. DYBAN, A., 1962 — "Grundriss der pathologischen Embryologie des Menschen"
22. FLAMM, H., 1959 — "Die pränatale Infektionen des Menschen, unter besonderer Berücksichtigung von Pathogenese und Immunologie"
23. FRISCH, L. (edit.), 1961 — "Cellular regulatory mechanisms"
24. IVANOVA-KAZAS, O. M., 1961 — "Comparative embryology of the Hymenoptera"
25. LENHOFF, H. M. and W. F. LOOMIS (edit.), 1961 — "The biology of Hydra, and of some other Coelenterates"
26. MANN, K. H., 1962 — "Leeches (Hirudinea); Their structure, physiology, ecology and embryology"
27. MERCER, E. H., 1961 — "Keratin and keratinization; An essay in molecular biology"
28. MOLOTKOVSKIJ, G. Ch., 1961 — "Polarity in plant development"
29. OBRAZTSOVA, G. A., 1961 — "Development of vestibular function in ontogenesis"
30. OLIVIER, G., 1962 — "Formation du squelette des membres chez l'homme"
31. PITKJANEN, I. G., 1961 — "New researches on fertilization and increase of fertility in swine"
32. RAMSEY, J. A. and V. B. WIGGLESWORTH (edit.), 1961 — "The cell and the organism"
33. RANZI, S. (edit.), 1961 — "Symposium on the germ cells and earliest stages of development"
34. RUDNICK, D. (edit.), 1961 — "Synthesis of molecular and cellular structure"
35. SAXÉN, L. and S. TOIVONEN, 1962 — "Primary embryonic induction"
36. WADDINGTON, C. H., 1962 — "New patterns in genetics and development"
37. WILLIS, R. A., 1962 — "The borderland of embryology and pathology" (2nd edit.)
38. YOUNG, W. C. (edit.), 1961 — "Sex and internal secretions" (3rd edit., Vols. I and II)
39. ZARROW, M. X. et al. (edit.), 1961 — "Growth in living systems"
40. ZOTIN, A. I., 1961 — "Physiology of the water metabolism in embryos of bony fishes and sturgeons"

1. "AIDS TO EMBRYOLOGY"
6th edit., 1962

by M. B. L. Craigmyle
207 pp., 64 figs.

Baillière, Tindall and Cox
London
Price: 10 s. 6 d.

The 6th edition of this small textbook on human embryology for medical students has been brought up to date in the sections dealing with chromosome numbers and placentation. Some of the earlier chapters have been amplified, many illustrations have been redrawn and several new ones are inserted.

2. "A TEXTBOOK OF COMPARATIVE ENDOCRINOLOGY"
1962

by A. Gorbman and H. A. Bern
468 pp., 282 figs., 39 tbs.

John Wiley & Sons, Inc.
New York — London
Price: 94 s.

This is the first textbook of this kind ever to be published. It was written for students as an introduction to the field of endocrinology as viewed from the broadest biological standpoint, as opposed to a strictly medical or paramedical one. This viewpoint has led to the inclusion, besides the purely physiological aspects, of the developmental, comparative anatomical, and evolutionary aspects of this branch of science. Therefore the book will prove to be of value to everyone preparing for the study of developmental endocrinology and the endocrinology of reproduction.

The embryology of most of the endocrine organs is briefly discussed. Embryonic function is mentioned in so far as it is known. There is a large chapter on the hormonal control of sex differentiation, and one on the endocrine control of reproductive cycles and pregnancy. Chapters on the hormonal control of development in insects, and of molting in crustacea may also be mentioned.

Each chapter is followed by a list of selected literature. The book is attractive for its numerous excellent illustrations and its clear print. There is a combined author and subject index.

3. "GRUNDZÜGE DER HISTOGENESE HÖHERER PFLANZEN;
II. DIE GYMNOSPERMEN"
1961

by H. v. Guttenberg
(Handbuch der Pflanzenanatomie,
Band VIII, Teil 4)
172 pp., 178 figs.

Gebr. Borntraeger
Berlin-Nikolassee
Price: D.M. 75.—
(Subscr.pr.: D.M. 60.—)

This book is the second part of a work announced in the ninth main issue (1961, p. 278). In general the reader may be referred to what has been said there. The information available on Gymnosperms is much more limited than that on Angiosperms. This is reflected in the size of the volume and of its bibliography, both of which are about half as large as vol. I.

4. "HUMAN EMBRYOLOGY"
(prenatal development of form and function)
3rd edition, 1962

by W. J. Hamilton, J. D. Boyd and H. W. Mossman
493 pp., 510 figs.

W. Heffer and Sons Ltd.
Cambridge
Price: 75 s.

The second edition of this well-known work appeared in 1952. The present edition has been extended and extensively revised. Many chapters have been completely rewritten. Thanks to the new human material that has recently become available, the chapter on early development is now based almost entirely on human data. Among the other chapters that have undergone considerable modifications are that on the development of the placenta, that on abnormal development, that on comparative embryology, and the section on sex differentiation. Throughout the book, more emphasis has been placed on genetical factors in development.

The general plan of the book has remained unaltered. The illustrative material, which always formed an outstanding feature of the book, has been considerably augmented, and many of the old figures have been redrawn. The selected references at the end of each chapter have been brought up-to-date.

5. "RADIOGRAPHIC ATLAS OF SKELETAL DEVELOPMENT OF THE FOOT AND ANKLE;
A standard of reference"
1962

by N. L. Hoerr, S. I. Pyle and C. C. Francis
163 pp.

Charles C. Thomas,
Springfield, Ill.
Price: $ 9.50

This atlas is the third of a series of standard atlases of human skeletal development. The first two atlases concerned the hand and the knee, respectively. The former was announced in the Supplement to the eighth issue of this journal (1960, p. 30).

The book deals only with postnatal development. It has been primarily designed for the use of clinicians.

The technical execution of the book is excellent.

6. "DEVELOPMENT AND STRUCTURE OF PLANTS;
A PHOTOGRAPHIC STUDY"
1962

by A. E. Lee and Ch. Heimsch
64 pp., 30 figs.
(paper-bound)

Holt, Rinehart and Winston
New York
Price: $ 1.50

This book is designed for students in elementary botany, to be used as a visual supplement to textbooks. It gives a record of the main structures in seeds and seedlings, roots, stems, leaves, flowers and embryo development, in the form of carefully selected and clearly labelled photographs, many of

which are made from microscopical material. The book is concluded by an alphabetical index.

7. "LABORATORY MANUAL OF VERTEBRATE EMBRYOLOGY"
5th edition, 1961

by R. Rugh
281 pp., many figs.

Burgess Publ. Cy.
Minneapolis, Minn.
Price: $ 4.00

Since its first appearance in 1943 this manual has become well-known. Its fourth edition appeared in 1956. It is not considered necessary to review it extensively here. It may suffice to state that an entirely new section has been added on the early development of the mouse (17 pages).

8. "EXPERIMENTAL EMBRYOLOGY; Techniques and Procedures"
3rd edition, 1962

by R. Rugh
501 pp., many figs.

Burgess Publ. Cy.
Minneapolis 15, Minn.
Price: $ 9.25

It is a pleasure to announce the appearance of a new edition of this widely known manual, which has long been out of print.

The book has not undergone much change, except for the inclusion of new sections on disaggregation and reaggregation of cells, on basic tissue culture techniques, and on the use of the mouse embryo.

The printing of the book has much improved, and a short alphabetical index has been added.

In the chapter on normal tables the extensive normal table on Xenopus laevis by Nieuwkoop & Faber is unfortunately lacking.

9. "DIE KINDLICHE ENTWICKLUNG; Physiologie und Pathologie"
1961

by E. Thomas
80 pp., 4 figs.
(paper-bound)

Ferdinand Enke Verlag
Stuttgart
Price: D.M. 17.40

The present book was written mainly for pediatricians with a wider biological interest, but it may be of importance for developmental biologists as well. It presents a number of highlights from the field of human developmental physiology and pathology, with special reference to genetical and endocrinological aspects.

The four main chapters discuss respectively prenatal development, postnatal development, theoretical aspects of acceleration and retardation (in-

cluding the possible influence of domestication), and the occurrence and causation of atavisms.

The book contains a bibliography of considerable size, which has been brought entirely up-to-date. The majority of the titles are by European (predominantly German-speaking) authors.

10. "LABORATORY STUDIES IN DEVELOPMENTAL ANATOMY"

2nd edition, 1962

by Th. W. Torrey
113 pp., 41 figs.

Burgess Publ. Cy.
Minneapolis 15, Minn.
Price: $ 3.00

This is a revised edition of a manual originally reviewed in the Supplement to the seventh issue of this journal (1958, p. 20). The new edition contains sections on skin and musculature, and additional material on the mammalian nervous system.

The book is meant for use with the same author's "Morphogenesis of the Vertebrates" which is reviewed below.

11. "MORPHOGENESIS OF THE VERTEBRATES"

1962

by Th. W. Torrey
606 pp., 325 figs.

John Wiley & Sons, Inc.
New York — London
Price: $ 9.95

The approach followed in this book is unique in that it integrates into a single unified treatment both the comparative anatomy and the embryology of the vertebrates. This is done in a way suitable for students, but the treatment is nonetheless rigorous. Stress is placed on the origin of form, but functional aspects are not ignored.

The book is in three parts, of which the first (57 pages) starts with a discussion of the relationships between phylogeny and ontogeny and of some other theoretical points, then continues with a treatment of the body plan, classification and evolution of vertebrates, and concludes with a brief general outline of vertebrate embryogeny.

Part two (113 pages) deals with gametes, fertilization, cleavage, germ layer formation, and early human development and placentation (including an outline of reproductive physiology).

Part three is the largest part (384 pages). It deals with the development and comparative anatomy of the various organ systems.

Throughout the text one finds "excursions" into certain special problems, printed in smaller type. At the end of each chapter a list of selected references are meant for students who want to penetrate more deeply into the subject.

The illustrative material used in the book is of excellent quality. Almost all line drawings are original. They are supplemented by numerous very good photographical illustrations.

The book is concluded by an extensive glossary and a detailed subject index.

12. "EMBRYOLOGIE"
2nd edition, 1962

by J. Turchini
(Aide-mémoire d'Histologie et d'Embryologie)
88 pp., 46 figs.
(paper-bound)

G. Doin & Cie.
Paris
Price: 5 N.F.

This little book was written for the use of medical students. It contains a concise description of human development, with very brief excursions into such fields as endocrinology, heredity, causal embryology, and teratology. The book is illustrated with simple line drawings. There is no index and no bibliography.

* * *

13. "EXPERIMENTELLE ENTWICKLUNGSFORSCHUNG AN AMPHIBIEN"
1961

by E. Hadorn
(Verständliche Wissenschaft, Band 77)
102 pp., 39 figs.

Springer Verlag
Berlin-Wilmersdorf
Price: D.M. 8.80

This new member of the well-known series "Verständliche Wissenschaft" is meant as an introduction into experimental developmental biology. For practical reasons the author has restricted himself to the amphibians. The book was written for non-scientists, but it would make excellent supplementary reading, e.g. for medical or veterinary students with a broader biological interest. It is exceedingly well written, and very nicely illustrated with clear line drawnings. Moreover, it has the advantage of being short, thanks to a well-balanced selection of topics.

14. "DEVELOPMENT AND STRUCTURE OF THE CARDIOVASCULAR SYSTEM"
1961

Editor: A. A. Luisada
246 pp., 100 figs.

McGraw Hill Cy., Inc.
New York — Toronto — London
Price: 77 s.

The subject matter of this volume originally formed part of "Cardiology — An Encyclopedia of the Cardiovascular System". Two chapters are of special interest to our readers. The first is "Embryology of the heart and major vessels" by J. G. Wilson (17 pages). This presents the development of the human heart from the first beginning, as well as the most frequently encountered developmental anomalies. The chapter is well-illustrated, and contains a clear diagram of the hypothetical origin of pulmonary stenosis, aortic stenosis, and transposition of vessels. The second chapter to be mentioned here is "The fetal circulation: changes at birth" by S. R. M. Reynolds (8 pages). In this chapter the stress lies on the physiological processes involved. The book is concluded by a short chapter on the comparative anatomy of the heart in vertebrates.

15. "EMBRYOPATHIEN;
über die Wirkungsweise (Infektionsweg und Pathogenese)
von Viren auf den menschlichen Keimling"
1962

by G. Töndury
(Pathologie und Klinik in Einzeldarstellungen, Band XI)
311 pp., 207 figs.

Springer Verlag
Berlin — Göttingen — Heidelberg
Price: D.M. 76.—

Embryopathies may be defined as more or less extensive lesions of the embryo as a result of virus infections of the mother during the first three months of pregnancy. Embryopathies should be distinguished from other pathological phenomena in the prenatal period.

In the present book an exhaustive treatment is presented of all that has become known about embryopathies since their first discovery, about 20 years ago. It is natural that the stress should lie on the best investigated case, embryopathia rubeolica, but the effect of several other virus diseases are also discussed. Much of the material is original and published here for the first time. Moreover, the book contains a section on general aspects of prenatal pathology, and a chapter discussing the experimental data concerning the action of viruses on embryos of various laboratory animals.

The book is illustrated with numerous photomicrographs. The bibliography is entirely up-to-date.

* * *

16. "THE COMPARATIVE EMBRYOLOGY OF ODONATA, WITH SPECIAL REFERENCE TO A RELIC DRAGONFLY, EPIOPHLEBIA SUPERSTES SELYS"
1962

by H. Ando
205 pp., 72 figs.

The Japan Society for the promotion of Science
Tokyo
Price: $ 6.00

In this monograph the comparative embryology of thirty species of Odonata is studied. They represent all the different families of the three suborders of Odonata known in Japan (Zygoptera, Anisozygoptera, Anisoptera). The discussion is based on an extensive description of the embryonic development of Epiophlebia superstes (Anisozygoptera). After a historical rewiew of the embryology of Odonata the reader finds chapters on materials and methods, oogenesis, organization of the egg, maturation and fertilization, cleavage, yolk cells, blastoderm, pole cells, development and movement of the germ-band and embryonic diapause. By far the largest chapter is concerned with organogenesis (98 pages). Finally the embryological relationships between the three suborders mentioned are discussed, as well as those between the Odonata and other Insects. The bibliography covers 12 pages. The author has tried to include all papers published after the appearance of the work of Johannsen and Butt on the embryology of Insects and Myriapods (1941). In an addendum newer papers up to 1961 are discussed. The book is illustrated with very clear line drawings and a few photographs.

17. "THE MAMMALIAN EGG"

1961

by C. R. Austin
183 pp., 77 figs., 7 tbs.

Blackwell Scientific Publ.
Oxford
Price: 42 s.

This monograph by one of the chief authorities in the field compiles all the known data on the cytology of the mammalian egg, including its anomalies. Particular attention is given to maturation, fertilization and cleavage. The process of oögenesis is not treated. A brief introductory chapter deals with general biology of eggs. A concluding chapter discusses the techniques of manipulation of eggs (for microscopy, transfer techniques, in vitro techniques). Two appendices present the most important literature on the latter two techniques in tabular form.

The book is profusely illustrated. There are several coloured plates. The extensive bibliography serves at the same time as an author index. There are subject and taxonomic indexes.

18. "SPERMATOZOAN MOTILITY"

1962

Editor: D. W. Bishop
publication nr. 72
322 pp., 113 figs.

American Association for the advancement of science,
Washington, D.C.
Price: $ 7.50

This book contains the papers delivered at a symposium organized by the American Society of Zoologists, held in New York in december 1960. Apart from a few, which have a more general and theoretical character, they are concerned with physiological, biophysical, cytochemical and electron microscopical aspects of sperm motility. There are 17 papers ranging from 3 to about 40 pages, each followed by a list of references. The book is concluded by a rather extensive index of authors and subjects. It is well printed and well illustrated.

Authors of papers: Bishop (Baltimore, Md.), Brokaw (Pasadena, Calif.), Carlson (Baltimore, Md.), Dunham (Chicago, Ill.), Fawcett (Boston, Mass.), Flipse (University Park, Pa.), Gonse (Lyon), Gray (Cambridge), Hayashi (New York), Nelson (Atlanta, Ga.), Pautard (Leeds), Rikmenspoel (Stanford, Calif.), Rothschild (Cambridge), Salisbury (Urbana, Ill.), Steinbach (Chicago, Ill.), Terner (Boston, Mass.), Tibbs (Dundee).

19. "THE CELL;
Biochemistry, Physiology, Morphology"

Vol. II, 1961
Vol. V, 1961

Editors: J. Brachet and A. E. Mirsky
Vol. II: 916 pp., 323 figs., 13 tbs.
Vol. V: 597 pp., 198 figs., 11 tbs.

Academic Press
New York and London
Price: Vol II: $ 25.00
Vol. V: $ 20.00

These two volumes complete the treatise, of which previous volumes were

announced in two earlier issues of this journal (eighth full issue, 1959, p. 239, and ninth full issue, 1961, p. 277).

Vol. II covers „Cells and their component parts". The emphasis in this volume is on recent progress in such fields as biochemistry, cytochemistry, radio-isotope studies, and electron microscopy, in short, on the molecular aspects of cell biology. The volume contains 11 chapters.

Vol. V continues where vol. IV left off. It discusses gland cells, kidney cells, blood cells, bone and cartilage, skin and pigment cells, and finally antibody formation, and the morphology, biochemistry, and physiology of cancer cells.

Now that this really monumental treatise has been completed, we wish to congratulate the editors, the contributors, and the publishers on the magnificant result of their joint efforts.

20. "VERTEBRATE REPRODUCTIVE CYCLES"

2nd edition, 1961

by W. S. Bullough
(Methuen's Monographs on Biological Subjects)
123 pp., 12 figs.

Methuen & Cy. Ltd.
London
Price: 12 s. 6 d.

The first edition of this book was published in 1951 under the title "Vertebrate sexual cycles". The original text has been revised, and an appendix has been added that serves as an introduction to the more modern literature (up to 1959). The bibliography has been extended with some 20 new titles. The table of contents has undergone no change.

21. "GRUNDRISS DER PATHOLOGISCHEN EMBRYOLOGIE DES MENSCHEN"

1962

by A. Dyban
260 pp., 83 figs., 11 tbs.

VEB Gustav Fischer Verlag
Jena

This monograph is a translation from Russian. The author concentrates on the factors leading to pathological intra-uterine development, in particular during the first half of gestation. He does not give the anatomy of the malformations, since these are already sufficiently known from other sources. In 7 chapters an extensive discussion is given of the so called "critical periods" in development, genetical and exogeneous factors leading to pathological development, histophysiology and histology of abortive embryos as well as of the placenta, histochemistry of the chorion and endocrine function of the placenta in normal and pathological development of the embryo.

The work is to a great extent based on investigations by the author on 452, mainly abortive fetuses with fetal membranes, available in the medical institute in Lvov, but also a wealth of information from recent literature is included. The bibliography contains 340 articles from Russian authors and 630 articles in other languages. The book contains many photographs and is concluded by a subject index.

22. "DIE PRÄNATALE INFEKTIONEN DES MENSCHEN, unter besonderer Berücksichtigung von Pathogenese und Immunologie"

1959

by H. Flamm
136 pp., 2 figs.

Georg Thieme Verlag
Price: D.M. 19.80

This monograph brings together all data on prenatal infectious diseases and their effects on the embryo and fetus. The subject matter is systematically arranged according to the size of the infective organisms, ranging from the viruses through the bacteria and fungi to the unicellular parasites and the worms. A final chapter deals with the immunology of the prenatal and neonatal periods.

The book is not illustrated. It contains a very extensive, systematically arranged bibliography.

23. "CELLULAR REGULATORY MECHANISMS"

1961

Editor: L. Frisch
(Cold Spring Harbor Symposia on Quantitative Biology, Vol. XXVI)
423 pp., 417 figs., 12 pls., 168 tbs.

The Biological Laboratory
Cold Spring Harbor, L.I., N.Y.
Price: $ 12.00

It is not necessary to evaluate the merits of a volume of the famous series of Cold Spring Harbor Symposia. It will be sufficient to indicate why this particular volume is of special interest to our readers. This is not immediately apparent from the table of contents. The sessions were devoted to the role of the genetic material as an information code in protein sythesis, to the mechanism of information transfer from the genetic material to the site of synthesis, and to cellular mechanisms governing the rates of enzyme activity and enzyme synthesis. Most of the research presented dealt with microorganisms. However, the significance of this research for questions of normal and abnormal growth and development in multicellular forms is apparent. This is borne out in particular by the concluding paper by Monod and Jacob, which is in a way a summing up of the entire symposium, and which bears the title "Teleonomic mechanisms in cellular metabolism, growth, and differentiation". This must be a stimulating article for every developmental biologist who tries to think in molecular terms.

24. "COMPARATIVE EMBRYOLOGY OF THE HYMENOPTERA"

1961

by O. M. Ivanova-Kazas
264 pp., 114 figs.

Izdatelstvo Leningradskogo Universiteta
1961

This book is written in Russian and is announced by title only.

The book is in two parts, a special and a general one. In the former the development of ten species belonging to ten different genera is discussed. The book is illustrated mainly with line drawings. The bibliography covers ten pages, four of which are devoted to Russian papers.

25. "THE BIOLOGY OF HYDRA,
and of some other Coelenterates"
1961

Editors: H. M. Lenhoff and W. F. Loomis
467 pp., 187 figs., 35 tbs.

Univ. of Miami Press
Coral Gables, Florida
Price: $ 4.50

This book is a report on a symposium held in Coral Gables, Fla., in March, 1961. In it took part 64 North American biologists from different disciplines, but all working with, or interested in coelenterates. The book contains the 23 papers delivered, followed by records of the group discussions. The many-sided significance of coelenterate organisms is illustrated by the variety of subjects covered by the various contributions. We list the following topics: cytology, cytochemistry, ultra-structure, cytogenesis, feeding, nutrition, tissue culture, symbiosis, calcification, patterns of colonial growth, aging, regeneration, budding. The aim of the symposium was the establishment of an interdisciplinary synthesis. Much of the work recorded is still in a preliminary phase.
The book is profusely illustrated. Many electron-micrographs are included. There is an extensive subject index.

Authors of papers: Burnett (Cleveland, Ohio), Chapman (New York), Claybrook (Detroit, Mich.), Crowell (Bloomington, Ind.), Eakin (Austin, Tex.), Fulton (Waltham, Mass.), Goreau (Mona, Jamaica), Hand (Berkeley, Calif.), Hess (St. Louis, Mo.), Kline (Bloomington, Ind.), Lane (Miami, Fla.), Lenhoff (Miami, Fla.), Li (Miami, Fla.), Loomis (Greenwich, Conn.), Lytle (New Orleans, La.), Muscatine (Miami, Fla.), Park (Bethesda, Md.), Phillips (Berkeley, Calif.), Slautterback (Madison, Wis.), Spangenberg (Refugio, Tex.), Strehler (Bethesda, Md.), Welsh (Cambridge, Mass.), Wood (Seattle, Wash.).

26. "LEECHES (HIRUDINEA);
Their structure, physiology, ecology and embryology"
1962

by K. H. Mann
(International Series of Monographs on Pure and Applied Biology; Div. Zoology, Vol. 11)
201 pp., 113 figs., 10 tbs., 1 coloured plate

Pergamon Press
Oxford - London - New York - Paris
Price: 45 s.
$ 7.50

The reason why we announce this monograph here is that it contains a chapter of 35 pages dealing with reproduction and development in leeches. The chapter discusses fertilization, egg laying and brood care, egg development in general, and the pattern of development in glossiphoniid, gnathobdelliid, and piscicolid leeches. It is illustrated with some 30 excellent line drawings.

27. "KERATIN AND KERATINIZATION;
An essay in molecular biology"
1961

by E. H. Mercer
(International Series of Monographs on pure and applied Biology; Div.: Modern trends in physiol. scis. Vol. 12)
316 pp., 116 figs., 21 tbs.

Pergamon Press
Oxford - London - New York - Paris
Price: 70 s.

This specialized monograph forms the first compilatory work on keratinization as a biological phenomenon.

The keratinized tissues form the hardened outer layers of the vertebrate integument and include skin, hair, feathers, claws, hoofs, etc.

The macromolecular structure of keratin revealed by recent electron microscopy and X-ray diffraction work, is given as a base for the understanding of the properties and biological function of these tissues. The topics "the role of cell membranes in tissue formation" (part of chapter I), "differentiation and protein synthesis" (chapter III), and "the growth of epidermal structures" (chapter IV) are of particular interest to our readers.

The book is richly illustrated with diagrams, X-ray diffraction pictures, and electron micrographs, and contains an extensive list of references, an author and a subject index.

28. "POLARITY IN PLANT DEVELOPMENT"
1961

by G. Ch. Molotkovskij
262 pp., 41 figs., 69 tbs.

Izdatelstvo Lvovskogo Universiteta

This book is written in Russian and is announced by title only. It is illustrated with line drawings and photographs which have not been reproduced very well on the poor-quality paper. The bibliography covers 17 pages, 15 of which are devoted to Russian papers.

29. "DEVELOPMENT OF VESTIBULAR FUNCTION IN ONTOGENESIS"
1961

by G. A. Obraztsova
131 pp., 28 figs., 14 tbs.

Izdatelstvo Akad. Nauk S.S.S.R.
Moskva — Leningrad

This book is written in Russian and is announced by title only. It is based on experimental work with rabbits. It is illustrated with line drawings and photographs. The bibliography covers 9 pages, 6 of which are devoted to Russian papers.

30. "FORMATION DU SQUELETTE DES MEMBRES CHEZ L'HOMME"

1962

by G. Olivier
231 pp., 123 figs.

Vigot Frères
Paris

In this monograph the development of the bones and girdles in the human embryo and foetus is studied. The joints are not included. The study is based on reconstruction of microscopic sections of embryonic stages and on dissection in the foetal phase. The primary aim of the author is to give a morphological description of the development of the different bones. A study of the causal relations in this development is not included. On the other hand, some attention is given to phylogenetic aspects. In every chapter a special bone is discussed extensively. Chapters are successively devoted to the clavicle, the scapula, the humerus, the bones of the fore-arm, the hand, the hip-bone, the femur, the bones of the leg, the foot. In every chapter the material is, as a rule, treated according to the following subdivision: time of appearance; place and orientation; embryonic form; histology; foetal and infantile morphology; ossification. In a final chapter a biometrical study of the growth of the same bones is presented.

The book is richly illustrated with simple but very clear line drawings and a few photographs. There are extensive summaries in English, Spanish and German. The bibliography covers 8 pages. The book is concluded by a short subject index.

31. "NEW RESEARCHES ON FERTILIZATION AND INCREASE OF FERTILITY IN SWINE"

1961

by I. G. Pitkjanen
185 pp., 16 pls., 14 figs., 28 tbs.

Vsesojuznaja opdena Lenina Akademia
Selskochoz. Nauk Imeni V.I. Lenina
Moskva

This book is written in Russian. According to the brief English summary it describes the results of investigations carried out at the Pushkin Animal Breeding Research Laboratory. The results obtained by other Russian and foreign workers are also summarized.

The book is illustrated with line drawings and photographs. The bibliography covers ten pages, five of which are devoted to Russian papers.

32. "THE CELL AND THE ORGANISM"

1961

Editors: J. A. Ramsey and V. B. Wigglesworth
350 pp., 50 figs., 7 pls., 11 tbs.

Cambridge Univ. Press
Price: 52 s. 6 d.

This is a volume consisting of 20 essays dedicated to Prof. Sir James Gray on various subjects from the field of experimental zoology. The authors are

members and former members of the Department of Zoology, Cambridge University. The scope of many essays is wider and sometimes more speculative than is usual in more formal publications. The general approach is morphological (in the widest sense), rather than biochemical or biophysical, and the special interest of several contributions lies in the emphasis on biological organisation as a category in its own right, next to biochemistry and biophysics.

The contributions that are of special interest fo our readers are those by Swann (Fertilization and the control of cell division; 11 pages), Picken (Molecular biology and the future of zoology; 13 pages), Smith (The efficiency of embryonic development, or the price of the epigenetic process; 14 pages), Waddington (Cell architecture and information in cellular differentiation; 10 pages), and Wigglesworth (The epidermal cell; 17 pages).

The book is well-illustrated and contains an alphabetical index.

33. "SYMPOSIUM ON THE GERM CELLS AND EARLIEST STAGES OF DEVELOPMENT"
1961

Editor: S. Ranzi
733 pp., 286 figs., 48 tbs.

Fondazione A. Baselli
Istituto Lombardo
Milano
Price: 9500 Lire

This volume contains the papers presented at the symposium of the International Institute of Embryology in September 1958 at Pallanza (Italy).

Thirteen papers are devoted to "the formation, ultrastructure and physiology of oöcytes, as seen in the light of their morphogenetic significance", viz. "relation with maternal organism" (by Mintz, Philadelphia, Pa. and Blackler, Oxford), "progressive changes in structural and biochemical composition" (by Flickinger, Nogent-sur-Marne; Glass, San Francisco, Cal.; Gerzeli, Pavia; Vialli, Pavia; Lanzavecchia, Milano and Wartenberg, Hamburg), "polarity and bilateral symmetry" (by Devillers, Sceaux), and "nucleo-cytoplasmic relations" (by Vincent, Syracuse, N.Y.; Ficq, Bruxelles; Dettlaff, Moscow and von Bertalanffy, Topeka, Kan.).

There are 7 papers dealing with fertilization (by Mann, Cambridge; Tyler, Pasadena, Cal.; Metz, Tallahassee, Fla.; Edwards, London; Monroy, Palermo; Balinsky, Johannesburg; Colwin A. L. and Colwin L. H., New York), and 41 papers dealing with "progressive maturation of the organization pattern in fertilized and cleaving eggs". This latter subject has been treated in different systematic groups: Spiralia (by Lehmann, Bern; and Weber, Bern), Ascidia (by Minganti, Palermo; Vandebroek, Louvain; Mancuso, Palermo; and De Vincentiis, Palermo), Enteropneusta (by Vandebroek, Louvain), Arthropoda (by Krause, Würzburg; Sander, Würzburg; and Colombo, Benassi and Allegri, Padova), Echinodermata (by Lallier, Villefranche-sur-Mer; Hörstadius, Uppsala; Whiteley and Chambers, Seattle, Wash.; Scarano, Napoli; and Wolsky, New York), and Mammalia (by Brambell, Bangor; Mulnard, Bruxelles; Tarkowski, Warsaw; Glenister, London; and Skreb, Zagreb), as well as according to special subjects: "development of symmetry in vertebrates" (by Clavert, Strasbourg; and Curtis, London), "role of the nucleus" (by Briggs, Bloomington, Ind.; King and Di Berardino, Philadelphia, Pa.; Fischberg, Ox-

ford; Gurdon, Oxford; Grant, Baltimore, Md.; Barigozzi, Milano; Chen and Zeller, Zürich; and Baltzer, Bern), "topogenesis and topochemistry" (by Monroy, Palermo; Chen, Zürich; Deuchar, London; Raunich, Ferrara; Balinsky, Johannesburg), and "early development of special proteins" (by Nace, Suyama and Smith, Ann Arbor, Mich.; Ranzi, Milano; Leone and Castiglioni Casnati, Napoli; Ten Cate, Dandrieu and Gortzak, Utrecht; Schalekamp, Amsterdam; Vyasov, Averkina and Volkova, Moscow; and Laufer, Baltimore, Md.).

Most papers are followed by a bibliography. The discussion is only recorded in the last paper in which the president, Prof. Dalcq, gives a comparison of the various types of egg organization.

34. "SYNTHESIS OF MOLECULAR AND CELLULAR STRUCTURE" 1961

Editor: D. Rudnick
(19th Symposium of the Society for the study of Development and Growth)
258 pp., 95 figs., 25 tbs.

The Ronald Press Cy.
New York
Price: $ 9.00

This volume embodies all eight papers delivered at a symposium held at Brandeis University in 1960. It is dedicated to the memory of Ross G. Harrison, and is opened by a short *in memoriam* by J. S. Nicholas. The subjects discussed in the various contributions are: "the transfer of information between the nucleic acids" (by Rich, Cambridge, Mass.), "the adaptive control of enzyme activity in animals" (by Knox, Boston, Mass.), "aspects of chondrogenesis and myogenesis" (by Holtzer, Philadelphia, Pa.), "relation of primary cell wall formation to cell development in plants" (by Jensen, Berkeley, Calif.), "chemical and morphological differentiation of the basement lamella" (by Edds and Sweeny, Providence, R.I.), "changes in synthesis induced in organ cultures" (by Fell, Cambridge), "systemic factors in initiation of regenerative processes in limbs of larval and adult amphibians " (by Schotté, Amherst, Mass.), and "growth induction in explanted cells and tissues: metabolic and morphogenetic manifestations" (by Steward, Ithaca, N.Y.).

The book is adequately illustrated, and contains an alphabetical index.

35. "PRIMARY EMBRYONIC INDUCTION" 1962

by L. Saxén and S. Toivonen
271 pp., 86 figs., 10 pls.

Logos Press, Academic Press
London
Price: 50 s.

This well written and well organised monograph on "primary embryonic induction" as the interaction between the invaginating archenteron roof and the overlying ectoderm in the amphibian embryo comprises the chapters: historical background of the induction problem; the early development of the amphibian embryo; differentiation capacities of the germ layers in the am-

phibian gastrula; the responding tissue (the ectoderm); heterogeneous inductors; diffusibility of inductive agents; chemistry of inductive agents; an immunological approach to the problem of induction; conceptions of primary induction and their experimental basis; and theories in the light of experimental data.

The authors subdivided the analysis of the primary induction process into a number of episodes which they characterised as the hopeful "twenties", the rather confused "thirties", the depressed "forties", the more optimistic "fifties" and the coming "sixties".

At the beginning of the sixties the comprehensive survey of the literature on the analysis of this fundamental process of development will certainly be highly appreciated by all embryologists. It is therefore hoped that this book will give a real stimulus to further analysis in the "explosive" episode of the "sixties".

The chapters are illustrated with many diagrams, drawings and photographs. The book gives a very extensive list of references and a subject index.

36. "NEW PATTERNS IN GENETICS AND DEVELOPMENT"

1962

by C. H. Waddington
(nr. XXI of the Columbia Biol. Series)
271 pp., 72 figs., 24 pls.

Columbia Univ. Press
New York and London
Price: $ 10.—

We are very happy to announce this new monograph on "new patterns in genetics and development" dealing with the central problem of the genetical interpretation of differentiation, the structural organization at the supramolecular, cellular and tissue levels. The author has tried to synthesize data and outlooks in the two fields of genetics and development, bringing together new discoveries in microbiological genetics and molecular biology, and new information from electron microscopy, autoradiography and immunology.

The book is based on a set of six Jesup lectures given at Columbia University in April and May 1961. The author discusses possible interactions between different genes and the actions of the genes upon primary and secondary protein synthesis, for which fascinating new evidence has recently accumulated. He then considers the significance of cellular ultrastructure in the kinetics of gene action and distinguishes a number of categories of form generation in the cell, and so tries to approach the ultimate biological pattern formation through the study of morphogenesis in single cells and through various steps of multicellular morphogenesis.

This book demonstrates that the disciplines of embryology and genetics merge completely with one another.

Like all this author's books, the essays are written in a very clear and stimulating form, and are of particular interest to geneticists, as well as embryologists, as an aid to understanding each other's methods of analysis and lines of thinking.

The chapters are illustrated with original diagrams and drawings. A large number of microphotographs and electron micrographs are inserted in the middle of the book. The book has an extensive list of references of genetical and embryological work and gives an author and subject index.

37. "THE BORDERLAND OF EMBRYOLOGY AND PATHOLOGY"

2nd edit., 1962

by R. A. Willis
675 pp., 244 figs.

Butterworths
London
Price: 90 s.

This compilatory work of which the second edition appears four years after the first, has been written in the conviction that embryologists and pathologists have much to gain by a better knowledge of each other's fields. It is therefore very useful that in this book much attention has been paid to the terminology and to the explanation of the principal terms and concepts, used in describing the nature and results of developmental disturbances.

After introductory chapters concerning experimental embryology and a description of normal human development the author synthesizes the numerous data, known from human pathology in a very systematic way. The anomalies are clearly described and critical and ample discussions are given of their embryological background.

A separate chapter is devoted to inborn metabolic disorders. Of special interest for embryologists are the chapters dealing with regeneration and repair, metaplasia, and transplantation and culture of tissues. An extensive bibliography follows each chapter, and the work is concluded by a subject index. In an appendix suggestions for further research are given. The book is illustrated by line drawings from various other sources and by a large number of good photomicrographs, not published previously. The printing is excellent.

38. "SEX AND INTERNAL SECRETIONS"

3rd edit., 1961
Vol. I and II

Editor: W. C. Young
Vol. I: 728 pp., 214 figs., 34 tbs.
Vol. II: 908 pp., 186 figs., 53 tbs.

The Williams & Wilkins Cy.
Baltimore, Md.
Price: $ 15.00

The third edition of the classical work on "Sex and internal secretions", edited by W. C. Young, forms practically a completely newly written work.

It gives a critical survey and discussion of the many problems in this wide field, and will serve as a guide for any worker in the field of basic as well as clinical and agricultural sciences.

In this third edition relatively more space has been given to the role of the gonadal hormones, the control of reproductive behaviour and relatively less to the biochemical problems of hormone synthesis, utilization and metabolism, since excellent reviews have recently been published on the latter topics.

The whole work has been published in two volumes. The first volume comprises the sections a) *"Biologic basis of sex"* with contributions by J. W. Gowen and R. K. Burns; b) *"The hypophysis and the gonadotrophic hormones in relation to reproduction"* with contributions by H. D. Purves and R. O. Greep; c) *"Physiology of the gonads and accessory glands"* with contributions by A. Albert, Miss D. Price and H. Guy Williams-Ashman, W. C. Young, J. W. Everett, F. L. Hisaw and F. L. Hisaw Jr., A. T. Cowie and S. J. Folley, Cl. A. Villee and J. H. Leathem.

The second volume contains the sections d) *"Biology of sperm and ova, fertilization, implantation, the placenta, and pregnancy"* with contributions by D. W. Bishop, R. J. Blandau, G. B. Wislocki, Miss H. Padykula and M. X. Zarrow; e) *"Physiology of reproduction in submammalian vertebrates"* with contributions by Th. R. Forbes and A. van Tienhoven; f) *"Hormonal regulation of reproductive behavior"* with contributions by W. C. Young, A. M. Guhl, D. S. Lehrman, J. W. Money, J. L. Hampson, Mrs. J. G. Hampson and Miss M. Mead.

This very important work gives extensive references at the end of each chapter and a complete author and subject index at the end of the second volume (35 and 92 pages respectively). The work is very well printed and illustrated with numerous drawings and photographs.

39. "GROWTH IN LIVING SYSTEMS"

1961

Editors: M. X. Zarrow et al.
759 pp., 252 figs., 67 tbs.

Basic Books, Inc.
New York
Price: $ 15.00

This book contains all the papers delivered at an international symposium held at Purdue University in June, 1960. The symposium covered growth in its widest sense, including the molecular, cellular, and organismal levels, and the influence of the environment and of the genetic material. Of the 35 contributors the large majority were from the United States. The 33 contributions are arranged in three sections, headed respectively "Molecules, viruses, and bacteria", "Cells, tissues, and organisms", and "Plant growth and plant communities". The first two papers in section I ("Macromolecules and natural selection" by Crick, Cambridge; and "The synthesis of proteins" by Hoagland, Harvard Univ., Mass.), and all 14 papers in section II (by Brachet, Brussels; Drill, Chicago, Ill.; Hammond, Cambridge; Jukes, New York; Keys, Univ. of Minn.; Knobil, Pittsburgh, Pa.; Mazia, Berkeley, Calif.; Moscona, Chicago, Ill.; Pincus, Shrewsbury, Mass.; Puck, Denver, Colo.; Salpeter, Cornell Univ., N.Y.; Singer, Cornell Univ., N.Y.; Sussman, Waltham, Mass.; Williams, Harvard Univ., Mass.; Zeuthen, Copenhagen) are of direct significance to developmental biologists. Also in section III there are a few papers (by Bonner, Pasadena, Calif.; Steward, Cornell Univ., N.Y.; Wardlaw, Manchester; and Went, St. Louis, Mo.) which may be of interest.

The book is adequately illustrated. It contains a glossary and a combined author and subject index.

40. "PHYSIOLOGY OF THE WATER METABOLISM IN EMBRYOS OF BONY FISHES AND STURGEONS"

1961

by A. I. Zotin
320 pp., 75 figs., 58 tbs.

Izdateltsvo Akademia Nauk S.S.S.R.
Moskva

This book is written in Russian and is announced by title only.

The book is illustrated with line drawings and photographs. The bibliography covers 31 pages and is up-to-date. Ten pages are devoted to Russian papers.